

REMARKS

Claims 14-21 and 28-32 were previously pending. The applicants add new claim 33. The applicants request review and reconsideration of the pending rejections in view of the following remarks.

Claims 14-19 and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,535,296 ("Uchida"). Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida as applied to claims 14-19 above and further in view of U.S. Pat. No. 4,636,647 ("Nishizawa"). Claim 14 recites

wherein the photodiode comprises a first metallization on a side facing the submount, the submount comprises a second metallization on a side facing the photodiode, the first metallization and the second metallization defining a eutectic mixture, and the photodiode and the submount are directly bonded to one another by the eutectic mixture of the first and second metallizations. (emphasis added)

Uchida has not been shown to disclose a first metallization and a second metallization defining a eutectic mixture.

The examiner asserts that Uchida discloses

a submount 32 that is electrically contact-connected to the photodiode, wherein the photodiode comprises a first metallization 48 on a side facing the submount, the submount comprises a second metallization 54' on a side facing the photodiode, the first metallization and the second metallization defining a eutectic mixture, and the photodiode and the submount are directly bonded to one another by the eutectic mixture of the first and second metallizations. (Office action mailed April 21, 2008, page 2).

However, the applicants can find no indication that electrode pads 48 and electrode pads 54' define a eutectic mixture. Rather Uchida disclosed electrode pads 48 which are joined to electrode pads 54' by solder which is pre-applied to the electrode pads 48, 54' (see col. 7, lines 16-26). Thus, Uchida does not anticipate independent claim 14 or claims 15-19 and 29-32 depending therefrom.

Nor does Uchida make the claimed feature obvious. The applicants can find no indication that the solder disclosed by Uchida was a eutectic mixture. Moreover, even if the solder were a eutectic mixture, the eutectic mixture would join the first metallization to the

second metallization rather than being defined by the first metallization and the second metallization.

For example, the applicants do not concede that the combination of Uchida and Nishizawa is appropriate. However, even the proposed combination would still fail to disclose or make obvious all of the limitations of claim 14. Nishizawa stated:

As shown in FIG. 8, photodiode 59 is die-bonded to the pad 51 by use of ring solder such as AuSn eutectic mixture... (col. 3, lines 58-59)

Thus, replacing the unspecified solder disclosed by Uchida with the gold-tin eutectic mixture disclosed by Nishizawa would not provide "the first metallization and the second metallization defining a eutectic mixture, and the photodiode and the submount [being] ... directly bonded to one another by the eutectic mixture" (claim 14) or the feature that "the first metallization of the photodiode comprises a gold metallization and the second metallization of the submount comprises a gold-tin metallization, or vice versa" (claim 20). Rather the combination would provide a an *additional* material comprising the eutectic mixture (e.g., solder) used to bond the metallizations of the components. Accordingly, we ask the examiner to withdraw the rejections of the pending claims as being anticipated by Uchida or as being unpatentable over Uchida in view of Nishizawa.

New claim 33 is supported at least by, for example, FIG. 3 and paragraphs [0041] and [0043] in the application as published. New claim 33 depends from claim 14 and is patentable for at least the same reasons discussed above. Moreover, neither Uchida nor Nishizawa disclosed or made obvious the feature that "the second metallization has a different composition than the first metallization, the first metallization and the second metallization together defining the eutectic mixture."

In view of the above, we ask the examiner to allow the application. To the extent the examiner disagrees, we invite the examiner to contact the undersigned by telephone to discuss the case.

All of the dependent claims are patentable for at least similar reasons as those for the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicants have: (a) addressed certain comments of the examiner does not mean that the applicants concede other comments of the examiner; (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims; or (c) amended or canceled a claim does not mean that the applicants concede any of the examiner's positions with respect to that claim or other claims.

This response is being filed simultaneously with a petition for a two-month extension of the period for response. The fees in the amount of \$460 for a two-month extension of time petition are being paid concurrently herewith on the Electronic Filing System by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050, referencing 12406-270US1.

Respectfully submitted,

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